REMARKS

Claims 1-13 were presented and examined. In response to the Office Action, Claim 1 is amended. No claims are added or cancelled. Claims 1-13 remain in the Application. Reconsideration of the pending claims is respectfully requested in view of the above amendments and the following remarks.

I. Drawings

The Examiner objects to the drawings filed on December 3, 2004 (see Office Action Summary). However, Applicants submitted replacement drawings of Figures 1 and 2 on June 26, 2008 with the previous Response. Applicants request that the objection to the drawings be withdrawn.

III. Claim Rejections – 35 U.S.C. §103

A. In the outstanding Action, Claims 1, 4, 9, 12 and 13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,114,811 issued to Wu ("Wu") in view of JP Patent No. 2001-102200 – equivalent of U.S. Patent No. 6,407,359 issued to Lagarde et al. ("Lagarde") and U.S. Patent No. 6,427,621 issued to Ikegawa et al. ("Ikegawa"). Applicants respectfully traverse the rejection.

Applicants amend Claim 1 to recite that the central core is substantially flush with the level of the wall of the chamber. The amendment is consistent with the recited feature that the dielectric material is substantially flush with the level of the wall of the chamber. Support for the amendment can be found from line 39 of page 7 to line 3 of page 8.

Wu discloses a device for producing a plasma in a chamber 6 comprising means 1, 4 and 6 for producing an energy in the microwave spectrum (col. 4, line 33-34 and 46) for the excitation of the plasma. The means comprise at least one basic plasma excitation device 10 (col. 4, line 61-65).

Applicants, however, respectfully disagree with the Examiner when it is said that Wu discloses a device wherein the excitation device 10 comprises a coaxial applicator of the

microwave energy, of which one end is connected to a production source of microwave energy, the other end being directed to the gas to be excited within the chamber.

The microwaves of Wu are produced in the hollow waveguide 1 (col. 4, line 33-34) and then transmitted to the transmission chamber 4 (col. 4, line 35-38). The chamber 4 does not contain the gas to be excited. The chamber 4 constitutes an intermediate chamber. The treatment chamber 6 is the chamber that contains the gas to be excited. Neither the wave guide 3 (col. 4, line 35-37) nor the antenna elements 10 (col. 4, line 61) form a coaxial applicator. This is because energy transmission in a wave guide and in an antenna element is completely different from energy transmission in a coaxial applicator. Further, neither the wave guide 3 nor the antenna elements 10 has a coaxial structure.

In Wu, energy is not transmitted via a coaxial applicator, as recited in Claim 1. Rather, energy is transmitted through the antenna elements 10 with resonance conditions (see, col. 5, lines 3-4 and line 50-52). Therefore, the technology involved in Wu is therefore completely different from the technology of the claimed invention.

The only embodiment of Wu comprising a coaxial applicator is shown in FIG. 12 (col. 6, line 44). However, the applicator is not used to excite the plasma, and the end of the coaxial applicator is not directed to the gas to be excited within the treatment chamber (see, FIG. 12 and element 28). Once again, the device of Claim 1 is different from the device of FIG. 12 of Wu because the elements linking the chamber 4 and the treatment chamber 6 to excite the plasma are antenna elements 10' (col. 6, line 49-50) and not a coaxial applicator, as recited in Claim 1.

Wu, therefore, does not disclose a device comprising a coaxial applicator, of which one end is connected to a production source of microwave energy, the other end being directed to the gas to be excited within the chamber.

As mentioned above, the excitation device of Wu is antenna elements and not coaxial applicators. Neither Lagarde nor Ikegawa supplies the missing elements in Wu respect to the recited coaxial applicator.

Lagarde is relied on for disclosing a microwave energy sources E connected to one end of an excitation device. The excitation device of Lagarde comprises coaxial applicators (col. 4, line 54). However, the microwave energy sources E of Lagarde cannot be combined to the antenna elements of Wu, as they belong to completely different technologies, and the layout of the combination would be contrary to the layout taught in FIG. 12 of Wu. For example, Wu discloses that the antenna elements transmit energy by using coupling effects and resonance conditions (col. 5, lines 3-4 and line 50-52). On the other hand, Lagarde discloses that the wire applicator 4 transmits energy while avoiding radiating microwaves and avoiding microwave coupling between the applicators (col. 4, lines 54-60). Therefore, there is no motivation to combine Wu with Lagarde.

Furthermore, the coaxial applicators of Lagarde are not flush with the level of the wall of the chamber (see, FIG. 1), as explicitly recited in Claim 1. Therefore, the combination of Wu and Lagarde cannot lead to the claimed invention.

Similar to the reason mentioned above with respect to Lagarde, the coaxial applicator 11 of Ikegawa cannot be combined with the antenna elements of Wu. They belong to completely different technologies.

Ikegawa describes a method and means for distributing microwaves between two plates 2 and 3, in order to generate plasma between the second plate 3 facing the first plate 2. Ikegawa is relied on for disclosing the use of a dielectric in an excitation device. However, even if Ikegawa discloses that the space between the coaxial cable 1 and the wall of the chamber can be filled with a dielectric (col. 4, line 49-51), Ikegawa does not disclose that the central core is substantially flush with the level of the wall of the chamber. In FIG. 1 of Ikegawa, it is shown that the central core 11 goes beyond the level of the wall of the chamber 1, so as to allow the plate 2, which is of greater diameter with respect to the central core, to be inside the chamber. Further, Ikegawa does not disclose that the dielectric material 16 is substantially flush with the level of the wall of the chamber. In FIG. 1 of Ikegawa, it is shown that the dielectric material 16 covers the wall of the chamber on top of being filled in the space between the central core and the wall, therefore not being flush with the level of the wall of the chamber.

In the claimed invention, the central core, the dielectric material and the level of the wall of the chamber are flush with each other; that is, the excitation device has a planar structure. By contrast, in Ikegawa (see, FIG. 1),

(a) the dielectric material is on top of the level of the chamber;

(b) the central core extends beyond the level of the wall of the chamber. Within the level of the wall of the chamber contains a plate, whose diameter is greater than the diameter of the central core, at the extremity of the central core; and

(c) the wall of the chamber extending around the central core.

Therefore, even if Wu, Lagarde and Ikegawa are combined, the combination cannot lead to the claimed invention. The claimed invention is therefore patentable in view of the cited prior art.

Thus, for at least the foregoing reasons, Wu in view of Lagarde and further in view of Ikegawa may not be relied upon to disclose or render predictable each and every element of amended Claim 1. Since each of the elements of claim 1 are not provided by the cited prior art references, a *prima facie* case of obviousness may not be established. Applicants respectfully request reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. §103 over Wu in view of Lagarde and further in view of Ikegawa.

B. In the outstanding Action, Claim 2 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Wu, Lagarde and Ikegawa, as applied to Claims 1, 4, 9, 12 and 13 and further in view of U.S. Patent No. 6,401,653 issued to Taniguchi et al. ("Taniguchi"). Applicants respectfully traverse the rejection.

Claim 2 depends from amended Claim 1 and incorporates the limitations thereof. Thus, for at least the reasons mentioned above, Wu, Lagarde and Ikegawa do not teach or suggest each of the elements of Claim 2.

Taniguchi is relied on for disclosing the dielectric material refractory. However, Taniguchi does not supply the missing elements in the other references regarding the coaxial applicator and its structural relationship with respect to the dielectric and the chamber.

Thus for at least the foregoing reasons, Claim 2 is not *prima facie* obvious over Wu, Lagarde and Ikegawa and further in view of Taniguchi. Applicants respectfully request reconsideration and withdrawal of the rejection of Claim 2 under 35 U.S.C. §103 over Wu, Lagarde, Ikegawa and Taniguchi.

C. In the outstanding Action, Claim 3 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Wu, Lagarde and Ikegawa, as applied to Claims 1, 4, 9, 12 and 13 and further in view of U.S. Patent No. 6,156,667 issued to Jewett ("Jewett"). Applicants respectfully traverse the rejection.

Claim 3 depends from Claim 2, which depends from amended Claim 1 and incorporates the limitations thereof. Thus, for at least the reasons mentioned above, Wu, Lagarde and Ikegawa do not teach or suggest each of the elements of Claim 3.

Jewett is relied on for disclosing the specific materials of the dielectric material. However, Jewett does not supply the missing elements in the other references regarding the coaxial applicator and its structural relationship with respect to the dielectric and the chamber.

Thus for at least the foregoing reasons, Claim 3 is not *prima facie* obvious over Wu, Lagarde and Ikegawa and further in view of Jewett. Applicants respectfully request reconsideration and withdrawal of the rejection of Claim 3 under 35 U.S.C. §103 over Wu, Lagarde, Ikegawa and Jewett.

D. In the outstanding Action, Claim 5 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Wu in view of Lagarde and Ikegawa, as applied to Claims 1, 4, 9, 12 and 13,

and further in view of U.S. Patent No. 5,975,014 issued to Dandl ("Dandl"). Applicants respectfully traverse the rejection.

Claim 5 depends from amended Claim 1 and incorporates the limitations thereof. Thus, for at least the reasons mentioned above, Wu, Lagarde and Ikegawa do not teach or suggest each of the elements of Claim 5.

Dandl is relied on for disclosing the specific length of the dielectric material. However, Dandl does not supply the missing elements in the other references regarding the coaxial applicator and its structural relationship with respect to the dielectric and the chamber.

Thus for at least the foregoing reasons, Claim 5 is not *prima facie* obvious over Wu, Lagarde and Ikegawa and further in view of Dandl. Applicants respectfully request reconsideration and withdrawal of the rejection of Claim 5 under 35 U.S.C. §103 over Wu, Lagarde, Ikegawa and Dandl.

E. In the outstanding Action, Claims 6-8 and 11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wu in view of Lagarde and Ikegawa, as applied to Claims 1, 4, 9, 12 and 13, and further in view of U.S. Patent No. 6,060,836 issued to Maeno ("Maeno"). Applicants respectfully traverse the rejection.

Claims 6-8 and 11 depend from amended Claim 1 and incorporate the limitations thereof. Thus, for at least the reasons mentioned above, Wu, Lagarde and Ikegawa do not teach or suggest each of the elements of Claims 6-8 and 11.

Maeno is relied on for disclosing the use of O-rings. However, Maeno does not supply the missing elements in the other references regarding the coaxial applicator and its structural relationship with respect to the dielectric and the chamber.

Thus for at least the foregoing reasons, Claims 6-8 and 11 are not *prima facie* obvious over Wu, Lagarde and Ikegawa and further in view of Maeno. Applicants respectfully request

reconsideration and withdrawal of the rejection of Claims 6-8 and 11 under 35 U.S.C. §103 over Wu, Lagarde, Ikegawa and Maeno.

F. In the outstanding Action, Claim 10 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Wu in view of Lagarde and Ikegawa, as applied to Claims 1, 4, 9, 12 and 13, and further in view of U.S. Patent No. 5,368,685 issued to Kumihashi et al. ("Kumihashi"). Applicants respectfully traverse the rejection.

Claim 10 depends from claim 1 and incorporates the limitations thereof. Thus, for at least the reasons mentioned above, Wu, Lagarde and Ikegawa do not teach or suggest each of the elements of Claim 10.

Kumihashi is relied on for disclosing the means for cooling. However, Kumihashi does not supply the missing elements in the other references regarding the coaxial applicator and its structural relationship with respect to the dielectric and the chamber.

Thus for at least the foregoing reasons, Claim 10 is not *prima facie* obvious over Wu, Lagarde and Ikegawa and further in view of Kumihashi. Applicants respectfully request reconsideration and withdrawal of the rejection of Claim 10 under 35 U.S.C. §103 over Wu, Lagarde, Ikegawa and Kumihashi.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely claims 1-13, are now in condition for allowance and such action is earnestly solicited at the earliest possible date. If there are any additional fees due in connection with the filing of this response, please charge those fees to our Deposit Account No. 02-2666. Questions regarding this matter should be directed to the undersigned at (310) 207-3800.

PETITION FOR EXTENSION OF TIME

Per 37 C.F.R. 1.136(a) and in connection with the Office Action mailed on October 6, 2008, Applicants respectfully petition Commissioner for a two (2) month extension of time, extending the period for response to February 6, 2009. The amount of the petition filing fee for a 37 C.F.R. 1.17(a)(3) large entity will be charged to our Deposit Account No. 02-2666.

Respectfully submitted,

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Dated: January 22, 2009

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CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being submitted electronically via EFS Web to the United States Patent and Trademark Office on January 22, 2009.

Marilyn Bass 01-22-09

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